

Amendment dated August 17, 2006

Reply to Office Action of May 17, 2006

REMARKS

Applicants thank the Examiner for the thorough examination given the present application. Claims 1, 3, 5, 7, 9, 10, 13, 14, 17, 18, 21, 22, 25 and 26 are currently being prosecuted. The Examiner is respectfully requested to reconsider his rejections in view of the Amendments and remarks as set forth below.

Name Correction

On February 2, 2004, Applicants submitted an Information Disclosure Statement. The heading on the first page included the Applicant's name which was misspelled. In particular, the first name of the Applicant was spelled Nozomi where as the correct spelling is Nozomu.

Also on January 5, 2004, a letter was filed regarding the previous filing of a Declaration. The same mistake in the inventor's name was also made at that time. Applicants request that the Patent Office file be corrected to indicate the correct spelling of the inventor's name.

Specification

The Examiner objected to the title as not being indicative of the invention to which the claims are directed. Applicants have adopted the title suggested by the Examiner.

The Examiner objected to the Abstract as including an objectionable phrase. By way of the present Amendment, Applicants have cancelled this phrase and have also removed the initial phrase of the Abstract. The term "comprising" has also been removed. Accordingly, the Applicants submit that the Abstract is now in proper form.

The Examiner objected to a number of informalities in the specification on pages 1, 4, 6, 10 and 11. By way of the present Amendment, Applicants have corrected these informalities.

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Claim Objections

The Examiner objected to the claims due to a number of informalities in claims 1-4, 9, and 11-16. By way of the present Amendment, Applicants have corrected these errors either by Amendment or by canceling the claims. Accordingly, these objections are believed to be overcome.

Rejections Under 35 U.S.C. § 103

Claims 1-26 stand rejected under 35 U.S.C. § 103(a) as being obvious over Saunders (JP 2001-285169) in view of Lynch (US Patent 6,002,916). This rejection is respectfully traversed.

The Examiner states that the Saunders reference discloses a communication satellite facility with a first satellite having a receiving antenna, a down-converter means, a transmitting antenna, an up-converter means and an intersatellite communication means. The reference also shows a second satellite having an intersatellite communication means and a modulating/demodulating means. The Examiner admits that Saunders does not specify wideband. The Examiner relies on the Lynch reference to teach the use of wideband.

By way of the present Amendment, Applicants have added the limitations of claim 2 to claim 1 and the limitations of claim 11 to claim 9. In regard to dependent claims 2 and 11, the Examiner states that Saunders modified by Lynch discloses a second satellite provided with a circuit switching unit for a data link layer and a network layer as disclosed on page 24, lines 1-14 of Saunders.

Applicants submit that the combination of Saunders and Lynch does not render obvious the description of the invention in amended claims 1 and 9. First, it is noted that this section of page 24 refers to a switch 100 which merely switches signals from output 46 either to input 52 or input 68. Switch 100 is found in the first satellite 20 in this reference. However, claims 1 and 9 set forth a combination of elements wherein the circuit switching unit, is in the second satellite. The Applicants submit that this teaching in Saunders does not apply to the description of the circuit switching unit in the claims. Further, the claims set for a combination of elements

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wherein the circuit switching unit is for a data link layer and a network layer to conduct baseband signal processing. Applicants submit that these specifics of the switching are not seen in the references either.

The present invention utilizes a satellite communication system using function sharing by the various satellites. By providing a circuit switching unit for a data link layer and a network layer, the second satellite can process baseband signals. The hierarchical model shown in Figure 3 describes a network protocol defined by ISO with a bottom layer being a physical layer which specifies an electrical interface of physical media and basic modulation techniques. The second satellite governs the electrical interface in the physical layer while the third satellite carries out not only the signal processing related to the modulation technique which is at a relatively high position in the physical layer, but also signal processing relating to the data packet making technique as well as the transmitting/receiving protocol in a data link layer and the signal processing relating to the data transfer protocol between a pair of optional nodes connected to each other on the network in the network layer. As shown in Figure 1, the digital signal processor 31 carries out the signal processing relating to the high position of the physical layer and the circuit switching unit 32 carries out the signal processing relating to the data link layer and the network layer. Thus, the circuit switching unit 32 contributes to the improvement of the efficiency for the circuit switching.

The Saunders reference, discloses a satellite communication system where supplemental processing can be performed aboard a supplemental satellite launched after the first satellite. However, the second satellite compliments the system with a supplemental processor in order to enhance the processing capabilities of the system. The process of having an input and an output of the satellite is suitable for processing unprocessed or semi-processed IF signals received from the first satellite via a terminal link, but never describes that the processor can process base band signals. In order to conduct baseband signal processing in a satellite, it is necessary to demodulate the signals, but there is no description of a demodulator in the reference. Accordingly, satellite communications system in the reference cannot communicate between

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other satellites with base band signals which contribute to an improvement of the efficiency for the circuit switching.

The Lynch reference discloses space-based server network architecture which permits on demand transfer of mission and control data between client satellites in an orbit in an earth station irrespective of the location of the client satellites relative to the earth station. This network does not have the concept of a function of each layer individually and does not teach a circuit switching unit for a data link layer and a network layer which can communicate with baseband signals.

Thus, Saunders does not teach the data link layer and network layer as discussed. It only describes a switch deployable on a satellite suitable for switching signals from two inputs. Accordingly, Applicants submit that the invention as presently described in claims 1 and 9 is not obvious over the combination of Saunders and Lynch.

Claims 3, 5, 7, 10, 13, 14, 17, 18, 21, 22, 25 and 26 depend from these allowable independent claims and as such are also considered to be allowable.

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CONCLUSION

In view of the above remarks, it is believed that the claims clearly distinguish over the patents whereby the Examiner, either alone or in combination. In view of this, reconsideration of the rejection and allowance of all of the claims are respectfully requested.

It is believed that a full and complete response has been made to the Office Action, and that as such, the Examiner is respectfully requested to send the application to Issue.

In the event there are any matters remaining in this application, the Examiner is invited to contact Joe McKinney Muncy, Registration No. 32,334 at (703) 205-8000 in the Washington, D.C. area.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§1.16 or 1.17; particularly, extension of time fees.

Dated: August 17, 2006

Respectfully submitted,

By 

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